

VERSION WITH MARKINGS TO SHOW CHANGES MADE

The barrier layer is a polymeric layer 16 which is either thermoset or high temperature thermoplastic and resistant to bituminous material. By high temperature it is meant that it will not melt at the
5 application temperature of the hot asphalt which is generally about 350° F. Suitable materials include generally polar polymers such as polyesters, polyurethane, polyether-urethanes and the like. Preferred materials are polyethylene terephthalate (Mylar), and polybutylene terephthalate. This layer should be as thin as possible as can be from
10 about 0.00025 to about 0.015 inches in thickness. Although a thicker material can be utilized, it would merely add weight and provide no added benefit.

The barrier layer 16 is bonded to the roofing layer 12 by an adhesive layer 14. This must be an adhesive that is compatible with both
15 the roofing layer 12 and the barrier layer. Generally a copolymer or a polyurethane adhesive can be utilized for EPDM. When a hot melt is used, it can be applied as a molten liquid or as a thin sheet of adhesive which is melted during formation of the sheet 11 as described below. The adhesive may be purchased already coated on the barrier layer. One
20 commercially available adhesive/barrier composite which is particularly suitable is [Trans-kote] TRANS-KOTE KRTY sold by Transilwrap Company, Inc.

The adhesive layer 14 is preferably the same as an adhesive layer 18 which bonds the barrier layer 16 to a fleecy material 22.

Fleecy material 22 is a fibrous material either woven or non-woven. Likewise, it should not melt at the application temperature of the
5 hot asphalt. It can be formed from a variety of materials including polypropylene, nylon, glass, and polyester which is preferred. One such commercially available fleecy material is [Trevira] TREVIRA sold by John Manville Hoechst Celanese.

The sheeting material can be formed utilizing the equipment
10 as disclosed in Venable U.S. Patent 5,620,554. Basically the roofing layer 12 is unwound, heated and layers of adhesive, barrier layer adhesive (optionally as an adhesive/barrier layer/adhesive composite) and fleece 22 are laid on top of each other and passed between rollers to cause the adhesive layers 14 and 18 to melt bonding the EPDM 12 to
15 the barrier layer 16 and the barrier layer 16 to the fleece material 22.

Roof membrane 11 can also be formed by extruding hot melt adhesives between the respective layer and running the composite roofing layer barrier layer and fleece between compression rollers.

Although not shown, it may be preferable for the fleece
20 material to have a width slightly less than the width of the roofing layer so as to provide a 2 to 4 inch selvedge edge wherein no fleece material is